DOCUMENT RESUME

ED 159 494 CG 012 662

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TITLE Evaluating the Use of Sex-Role-Reversed Stories for Changing Children's Stereotypes.
SPONS AGENCY Office of Education (DHEW), Washington, D.C.; Spencer Foundation, Chicago, Ill.
PUB DATE 78
NOTE 20p.; Paper presented at the Annual Meeting of the American Educational Research Association (Toronto, Ontario, CANADA, March, 1978)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Changing Attitudes; *Childrens Literature; *Elementary School Students; Evaluation; Occupational Aspiration; Research Projects; *Sex Role; *Sex Stereotypes

ABSTRACT

The empirical phase of this project evaluated the use of role-reversed stories within school settings as a method of modifying elementary school children's attitudes about sex requirements relative to occupational choice. The subjects (N=1123) were first through fifth grade students from varying cultural backgrounds in different locations. Approximately half of the children were randomly selected as treatment subjects and were pretested with an instrument designed to measure sex-role attitudes. Treatment consisted of a series of stories which were written as sex-role reversed with regard to occupation. Posttests were administered one-to-two weeks after treatment and approximately a year later. The multivariate main effect for the treatment group was significant in all schools. The project showed that at least some aspects of children's attitudes can be changed using reading materials within a school system. (LFE)

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EVALUATING THE USE OF SEX-ROLE-REVERSED STORIES FOR CHANGING CHILDREN'S STEREOTYPES

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Session 6.06

This paper was presented at the 1978 annual meeting of the American Educational Research Association in Toronto, Canada, as part of the symposium entitled "Projects for Women's Educational Equity: The Evaluation of Interventions" chaired by Marlaine E. Lockheed. The activity which is the subject of this report was supported in part by the Office of Education, U.S. Department of Health, Education, and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the Office of Education, and no official endorsement by the Office of Education should be inferred. This research also was supported in part by a Spencer Foundation grant awarded through the School of Education, Indiana University and an Indiana University Summer Faculty Fellowship.

CG012662

EVALUATING THE USE OF SEX-ROLE-REVERSED
STORIES FOR CHANGING CHILDREN'S STEREOTYPES

We were awarded a small grant from the Women's Educational Equity Act Program. That grant was designed to accomplish two major objectives: the first was to evaluate the use of role-reversed stories as a method for changing children's sex-typed attitudes and the second was to disseminate the results from the first objective to people such as teachers who are in positions to actually influence change within the school setting. This paper will concentrate on describing the procedures and results from the evaluation objective.

Theoretical literature suggests that written materials are important in the formation and change of attitudes. Social learning and cognitive developmental theories agree that models are an important source of cultural information (Bandura, 1971; Kohlberg, 1966). Social learning proponents have emphasized that both live and symbolically-represented models affect children's behavior (Bandura & Mischel, 1965; Bandura, Ross, & Ross, 1963). According to Bandura (1971), "in many instances, people pattern their behavior after models presented in verbal or pictorial form" (p. 2).

It is obvious that books are prominent vehicles for verbally- and pictorially-presented models in school children's lives. Several content analyses of children's books have shown that the culture's traditional sex-role stereotypes about behaviors, attitudes, and occupations are presented by the books' authors and illustrators (e.g., Stefflre, 1969; Women on Words and Images, 1972).

Empirical research on the effects of reading materials on changing children's attitudes and behaviors has produced mixed results. Some studies

have shown that the content in books does affect children's attitudes. Litcher and Johnson (1969) were able to favorably change second graders' attitudes toward Blacks with the use of a multiethnic reading series over four months. Barclay (1974) found that a series of stories about working women decreased the rigidity of kindergarten girls' perceptions of appropriate women's work. In a similar study with preschool children, Flerx, Fidler, and Rogers (1976) showed that five thirty-minute reading sessions with books portraying egalitarian roles increased the children's egalitarian attitudes about peer and adult activities and personality characteristics.

Other studies were less successful in their attempts to change children's attitudes or behaviors using models presented in stories. Schau, Kahn, and Tremaine (1978) used one role-reversed story about each of ten occupations; the main character in each story was of the opposite sex from the elementary-school aged children's attitudes about sex requirements for those jobs. The use of the stories did not change the children's attitudes. Fischer and Torney (1976) verbally presented one story, which showed models engaging in either dependent or independent behaviors, to preschool children. This exposure did not affect the children's dependent behavior as measured by time elapsed before asking for help with a difficult problem.

An analysis of these studies suggest several important areas for further study. First, the number of stories used and/or the length of time the children spent in reading or listening to them appears important. Second, the content of the stories, aside from the directly-manipulated aspects such as role-reversal that are supposed to change attitudes, needs attention. If the goal is long-term and significant attitude or behavior change, the use of existing stories in which only the sex (e.g., Schau, Kahn, and Tremaine, 1978) or the race (e.g., Litcher & Johnson, 1969) of some of the characters

are changed is not likely to accomplish this goal (see Schau, Kahn, and Tremaine, 1978, for further discussion of this educational issue). Third, the samples of children that have been studied tend to be white, middle-class children from one school setting in one town or city. The samples used in attitude studies need to be extended to children with other cultural backgrounds in several locations.

We selected occupations to use in our stories. There were two primary reasons for this choice. In the United States, occupations are highly sex-stereotyped. Women and men tend to choose different jobs. Casual observation or an examination of Census statistics support that point. In addition, elementary-school children are sex-stereotyped in their attitudes about occupations. They believe that many jobs are for men and that few jobs are for women. Girls and boys also differ in their own personal vocational aspirations (Garrett, Ein, & Tremaine, 1977). Thus, occupations are sex-typed in reality and in children's attitudes.

The empirical phase of this project was designed to evaluate the use of role-reversed stories within school settings as a method of modifying elementary-school children's attitudes about sex requirements for occupations.

Methodology

Subjects

The subjects were first through fifth grade children from an upper-middle class suburban school (615 children), a rural school (231 children), and a middle-class small town school (277 children). Thus, the study was replicated with three samples of children from varying cultural backgrounds in different locations. The great majority of the children were Anglo.

Procedures

Pretest. Approximately half of the children of each sex at each grade level at each school were randomly selected and pretested with an instrument designed to measure children's attitudes about who "can" do various jobs. The pretests were administered by at least one male and one female experimenter to groups of approximately thirty children each. The experimenters first defined "can" for the children as meaning "that a person has the ability to do an activity, or that a person knows how or is able to learn how to do the activity if the person wants to." The children were then told that they were going to be asked about who they thought can do various jobs. They were assured that there were no right or wrong answers; each child was free to have their own ideas. To be certain that even the youngest children were competent in using the answer sheets, the experimenters discussed the response options and several example items with the groups before beginning the actual pretest items.

Of the twenty-one occupations on the instrument, seven were male-stereotyped, seven were female-stereotyped, and seven were neutral, as rated by elementary-school children in a previous study (Garrett, Ein, and Tremaine, 1977). In response to the question "Who can be (each job)?," the children were provided with five pictorially represented options. They were: only women (shown by four female faces), more women than men (shown by three female and one male face), about the same number of men and women (shown by two female and two male faces), more men than women (shown by three male and one female face), and only men (shown by four male faces). Each of the twenty-one occupations was defined by the experimenter as each item was orally presented (Schau & Kahn, 1978).

Treatment. The treatment consisted of a series of stories about characters in each of four occupations; these occupations were highly sex-sterectyped by elementary-school children in a pilot study (Garrett, Ein, and Tremaine, 1977). The stories were written to be sex-role-reversed with regard to occupation; that is, the main characters were of the opposite sex from the children's stereotypes.

The stories were about a female firefighter, a female ship captain, a male nurse, and a male airplane attendant. These characters were developed with the characteristics that modeling literature suggests are most salient to children. They were created to display, for example, friendliness, fairness, physical attractiveness, warmth, and good humor, and to be active, healthy, dependable, and cooperative (e.g., Jenkin & Vroegh, 1969). In a series of five stories about each character, the children were first introduced to the character as a positive person, then informed of the interest in the role-reversed occupation, and finally entertained with the character's exploits in the chosen field. Within each story series, the main character was confronted with a situation where she/he was labeled as incompetent in her/his work because of gender; each character successfully met that challenge.

Each story was rewritten three times to arrive at the final versions that were used in the study. The initial drafts were read and criticized by groups of fifth grade children. These children were not told the purpose of the stories; they were asked to tell us how to change the stories to make them more interesting. Their suggestions were incorporated into each successive draft. Thus, the final versions of the stories contained elements that representatives of the target group found important in generating interest.

Two versions of the stories were written. One version was at a level appropriate to be read aloud to first graders and read by third graders. The second version was at a fifth grade reading level.

Approximately half of the children of each sex in the first, third, and fifth grades at each school were randomly selected to serve as treatment subjects. Regular classroom teachers in the first, third, and fifth grades at each school administered the story treatment at the rate of one story per school day for four consecutive weeks. Minor variations occurred due to scheduling and weather problems. The teachers were provided with several procedural options, to help the project resemble "normal school" as much as possible. They could: play tape recordings of male and female voices reading the stories aloud; read the stories out loud to the children; or in the third and fifth grades, have the children read the stories either out loud or silently. The teachers were instructed to review the previous day's story with the class at the beginning of each reading session to facilitate comprehension, as the series were written in a serial manner. Following the stories each day, the children answered comprehension questions which tested for knowledge of the events in the stories. On Friday of each week, after the final story about a character, the children answered follow-up questions that dealt with their feelings about the character and her/his choice of an occupation.

The children who served as control subjects engaged in other types of activities designed by their teachers. A previous pilot study showed that more structured control activities were not needed. In that study, two types of control groups were used. One received the same stories as the treatment group except that the sex of the characters matched the children's occupational

stereotypes; the second was exposed to stories of comparable length and difficulty but the content was not related to occupations or to gender-roles. There were no differences between these groups in occupational sex-stereotypes (Schau, Kahn, and Tremaine, 1978). In addition, children are continually exposed to sexist stories. There is no logical or theoretical reason to assume that exposure to another set of sexist stories would make their stereotypes less rigid.

Posttest. The posttest was administered in the same manner as the pretest approximately one to two weeks after the treatment. The jobs on the posttest were identical to those on the pretest, but the posttest asked both who "can" and who "should" do each of the twenty-one jobs. "Should" was defined for the children as asking "if it is a good idea for the person to do an activity" (Schau & Kahn, 1978). Order of can and should was balanced across sex, pretest, grade, treatment group, and school.

Follow-up. Approximately one year after the posttest a follow-up measure was taken on the first, second, third, and fifth graders at the small town school. The other treatment children, now fourth and sixth graders, were not available for testing. The instrument used originally for the pretesting was readministered.

Analysis. To use the items on the occupational stereotyping scale as a measure of the extent of the children's sex-typing; any item given a rating of four by a child was recoded as two while any item given five was recoded as one. Thus, each child's score on each item ranged from one, extremely sex-typed (the child chose "only women" or "only men" for the item) through two, moderately sex-typed (the child chose "more women than men" or "more men

than women"), to three, not sex-typed (the child chose "about the same number of women and men"). The posttest scores were analyzed using multivariate analysis of variance. The four treatment occupations served as dependent variables in one analysis and the seventeen remaining nontreatment occupations as dependent variables in a second analysis. The factors in the analysis were pretest, order of can and should, sex, grade (1, 3, and 5), and treatment. A secondary analysis used only the nontreatment children and examined all twenty-one jobs for effects due to pretest, order, sex, and grade (1-5). Each school was analyzed separately. Because of the complexity of the design and the limitations of available computer programs, "should" and "can" could not be analyzed as repeated measures. They were therefore analyzed separately as if they were two independent full-factorial designs. A third analysis looked at the difference scores between "can" and "should" to approximate a repeated measures analysis.

To analyze the follow-up data, multivariate analyses of variance were run on the data from the second grade children to discover if those receiving the treatment the previous year as first graders retained their significantly more flexible attitudes. Again, two analyses were run: one on the four story jobs and a second on the other seventeen occupations. A secondary analysis on the nontreatment children using all twenty-one jobs examined the effects of practice on the instrument (once: only on follow-up; twice: posttest and follow-up; or three times: pre, post, and follow-up), grade, and sex.

The comprehensive questions were analyzed using univariate procedures. Pearson product moment correlations were computed between the numbers of correct comprehension items each child scored and the degree of stereotyping

she/he displayed on the posttest, and between the number of days present for the treatment and level of posttest stereotyping. Analyses of variance were run on each of the items on the instrument administered on the last days of each story series. Children in the control group also answered these items concerning attitudes toward the four occupations, so the analysis was run with the independent variables of treatment group, sex, and grade.

Results

Only the results related directly to the evaluation of the effectiveness of the stories are fully presented. Other results are summarized and will be available in a later paper.

Instrument Reliability

Internal consistency for the "can" portion of the posttest instrument was .91, for the "should" portion was .96, and for both combined was .95.

Posttest

Treatment Effects. The multivariate main effect for treatment group was significant for the four story occupations in all three schools. Children in the story groups were significantly less stereotyped in both their "can" and "should" responses to all four story occupations than children in the control groups. The standardized discriminant function coefficients showed that children's "can" responses to the job of airplane attendant consistently added very little to the information available in their responses to the other three occupations. For "should" responses, both airplane attendant and firefighter did not add new information (see Table 1).

The main effect for treatment group was significant for the nonstory occupations in the small town school for "can" responses ($F = 2.37$, $df =$

17,31, $p < .02$, $R^2 = .57$) and in the rural school for "should" responses ($F = 2.74$, $df = 17,17$, $p < .03$, $R^2 = .73$). In examining the mean scores for those occupations whose standardized discriminant function coefficients were greater than $|.3|$, a clear pattern emerged for the "should" responses from the rural school. The story group was less stereotyped than the control group for eleven out of thirteen jobs meeting that criterion. The "can" responses from the small town school did not give a clear pattern; the story group was less stereotyped on five of the nine jobs. Thus, in general the treatment did not generalize to nonstory occupations.

The only consistently significant interaction involving treatment group was the treatment by order of directions interaction. This interaction was significant only in the suburban school for the "can" responses to the non-story occupations ($F = 2.24$, $df = 17,302$, $p < .005$, $R^2 = .11$) and for the "should" responses to the story occupations ($F = 5.74$, $df = 4,312$, $p < .001$, $R^2 = .07$). Neither one of these interactions accounted for much of the variance in the children's responses. The pattern of means for the "can" responses was not clear. However, children tended to give the most flexible "should" responses when they were in the story treatment group and were asked for those responses before "can" responses. The order of the groups of children, from the most flexible, were: story group children who were asked for "should" responses before "can;" story children who were asked for "should" after "can;" nonstory children who were asked for "should" first; nonstory children who were asked for "should" second. However, this effect was not found in the other two schools.

Summary of Other Effects. In all cases the children were more stereotyped in their "should" responses than in their "can" responses; that

is, they believed that men and women had the ability to do jobs that the children did not believe it was a good idea for them to really do.

A significant order of the "can" and "should" effect in all three schools revealed that when the children were asked "can" first their "should" responses were more stereotyped than when they were asked "should" items first. In the same manner, when the children were asked "can" first, their "can" responses were also more stereotyped than when they answered the "can" items following the "should" items. The order effect can best be understood by thinking of the second set of items as seen in contrast to the first set. After answering the "can" items, the children responded to the "shoulds" with contrastingly rigid stereotyping. In the second case, responding to the "should" items first accentuated the contrasting neutrality of the "can" items.

For both the "can" and the "should" items, and for both the treatment and the nontreatment occupations, children became more flexible in their gender stereotyping with increasing age. This finding is consistent with cognitive developmental theory; children can be expected to become more cognitively flexible and better able to deal with complex categroization systems with age.

There were some significant sex differences although these were not consistent across schools. When they existed, boys were more stereotyped than girls in their "can" and "should" responses.

Comprehension Questions

The correlations among the number of days a child was present to receive the stories and the degree of stereotyping she/he displayed on the posttest and among a child's total score on the comprehension questions and her/his degree of stereotyping tended to be positive and significant, especially for "can" responses (see Table 2). Although these relationships were not large

enough to account for the majority of the variance in the posttest scores, the positive correlations lend support to the social learning theory of the cumulative and incremental effects of exposure. The better the comprehension of the stories and the larger the number of stories read or heard, the greater was the treatment effect. There, of course, also may be relevant differences among children who miss school and those who don't and between children who pay attention and those who don't.

There were significant treatment differences on the analyses of variance for most of the items, with the treatment group feeling that members of all four occupations worked harder than the control group felt they worked; that airplane attendants, ship captains, and nurses earned more money than the controls thought they earned; that airplane attendants and nurses had to be stronger than the controls thought they had to be; and that being an airplane attendant or a nurse was a more important job than the control group felt it was. The treatment group also was significantly less stereotyped in terms of which sex "should" and which sex "really can" do each of the four jobs.

Significant grade differences were found on almost all of the items; younger children were more extreme in their ratings of necessary strength and intelligence needed for the jobs and estimated income, difficulty, and importance of the jobs. As on the posttest instrument, the older children were more flexible than the younger children on the items concerning who "should" and who "really can" do the jobs.

Follow-up

Treatment Effects. The treatment main effects and interactions were not significant for the second graders for the story or nonstory occupations.

Summary of Other Effects. Significant practice effects were found with the flexibility of stereotyping increasing with practice on the instrument across all age levels. If considered from a cognitive developmental viewpoint, it could be speculated that experience with responding to the instrument might be disequilibrating enough to stimulate accommodation toward cognitive flexibility and more complex categorization systems. Thus, the instrument itself changed children's attitudes toward increasing flexibility.

The significant grade effect on the follow-up measure showed the same pattern as that on the posttest: increasing flexibility in gender requirements with age. There were no significant sex differences.

Discussion

The results of the project clearly show that children's attitudes about sex-requirements for stereotyped adult occupations can be altered, at least temporarily, by exposure to carefully constructed role-reversed stories. A previous study, using role-reversed stories that were not as carefully developed, found no effects due to exposure to the stories (Schau, Kahn, and Tremaine, 1978). In that study, existing sexist stories were used and the names of and pronouns referring to the main characters were changed to those appropriate for the opposite sex. That strategy for change did not work. In the current project, great care was taken to develop stories with appealing characters. We utilized the results of the modeling literature to help us create characters that the children would like. In addition, we included a "confrontation" for the character where she/he was challenged about her/his job competencies based on gender and where she/he successfully overcame that

challenge. Both strategies were used to help the children overcome cognitive dissonance about the characters' culturally "incorrect" choices of occupations. Also, we utilize children to help us rewrite drafts of the stories. These stories clearly resulted in change toward greater flexibility about sex-requirements, but only for the jobs used in the stories. The stories worked equally well for girls and boys at all three grade levels in all three schools. The results did not generalize to occupations other than the ones used in the stories.

In addition, the instrument design to measure stereotyping also changed attitudes toward increasing flexibility. Perhaps the instrument encourages children to think about sexism in jobs and that thinking results in change toward flexibility. More research is needed to further explore this result.

The project shows that at least some aspects of children's attitudes can be changed using reading materials within a school system, even when the teachers themselves may be sexist. It also shows that change is not accomplished by a few exposures to the type of nonsexist materials developed through merely changing names or occasionally showing a woman involved in behaviors culturally stereotyped for men.

Table 1. Multivariate statistics from the treatment main effect and means for the story occupations

	Suburban School				Small Town School				Rural School			
	"Can" Responses		"Should" Responses		"Can" Responses		"Should" Responses		"Can" Responses		"Should" Responses	
Multivariate Statistics												
F	18.89		25.72		4.52		7.19		12.26		3.61	
df	4,315		4,312		4,44		4,46		4,77		4,30	
p	.001		.001		.004		.001		.001		.016	
R^2	.19		.25		.29		.38		.39		.33	
	SDFC	Means	SDFC	Means	SDFC	Means	SDFC	Means	SDFC	Means	SDFC	Means
Occupations												
Firefighter	.20	1.97 1.66	-.02	1.52 1.27	.43	1.92 1.40	.24	1.80 1.17	.26	1.70 1.14	-.15	1.44 1.12
Nurse	.65	2.28 1.76	.60	1.95 1.40	.55	2.00 1.37	.42	1.90 1.20	.67	2.26 1.35	.77	2.30 1.33
Ship Captain	.32	2.12 1.68	.56	1.87 1.40	.24	1.86 1.35	.67	1.77 1.12	.43	2.04 1.31	.48	2.17 1.29
Airplane Attendant	.10	2.34 1.98	.19	2.17 1.75	.14	2.14 1.70	-.09	1.97 1.54	.00	2.30 1.63	.10	2.52 1.92

number of days present for treatment and among degree of stereotyping and total comprehension scores.

Occupations	Number of Days Present		Total Correct on Comprehension Questions	
	Can	Should	Can	Should
Firefighter	0.26***	0.16*	0.32***	0.19**
Nurse	0.21**	0.12	0.19**	0.10
Ship Captain	0.22**	0.15*	0.25***	-0.13*
Airplane Attendant	0.06	0.09	-0.02	0.03

*$p < .05$

**$p < .01$

***$p < .001$

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